Sinske HATTORI* & Pang-Juan LIN**: **A new species of *Frullania* from Hainan Island, China**

服部新佐*・林　邦娟**: 中国海南島産ヤスデゴケ属の1新種

In our study of Chinese Frullaniaceae, we found an interesting species of *Frullania,* subgen. Trachycolea. In this species, the leaf-lobules are almost globose, lacking a rostrate tip, and the margins of lobule-mouths are strongly incurved, and in particular the outer margin develops a subligulately gibbous lamina which is folded toward inside of the lobule and composed of much smaller cells. These features have been seen only in *Frullania kitagawana* Hatt., endemic to New Caledonia, and also, in lesser degree, in *F. ferdinandi-muelleri* Steph. endemic to New South Wales, Australia.

Frullania (Trachycolea) **hainanensis** Hatt. & Lin, sp. nov. (Fig. 1)

A *Frullania kitagawana,* specie affinissima, differt ramis saepe flagelliformibus, amphigastriis caulinorum angustioribus, breviter bifidis, lobis foliorum caulinorum majoribus, appendiculis basalibus latioribus, lobulis multo majoribus, labia oris interiore incurvis fere ad basem.

Plant medium to large in size, fuscous-brown in herb.; stem ca 2 cm long and 0.17 mm in diam., deep brown, irregularly pinnately branched, branches short and often flagelliform (remaining small, imbricate underleaves on the branch, almost all the lateral leaves being caducous) or rarely elongate and similar to the stem. Lobes of stem-leaves densely imbricate, widely spreading, dorsally extending 1 to 2 the stem-width beyond the distal edge of stem, usually concave with incurved distal margins, when flat obovate-orbicular, 1-1.1 mm long and wide, with widely rounded apices and wide but shallowly rounded basal appendages; cavities of marginal cells 20-25×15-17 μm, of median cells 25-35×20-25 μm, of basal cells to 50×35 μm, pale ocher to red-brown, walls thin, with large, nodulose and often ± sinuately confluent trigones and intermediate thickenings, hyaline or nearly so in marginal to median cells, ocher in median to basal cells; lobules very large, 0.4-0.5 mm long and 0.45-0.5 mm wide, inflated-

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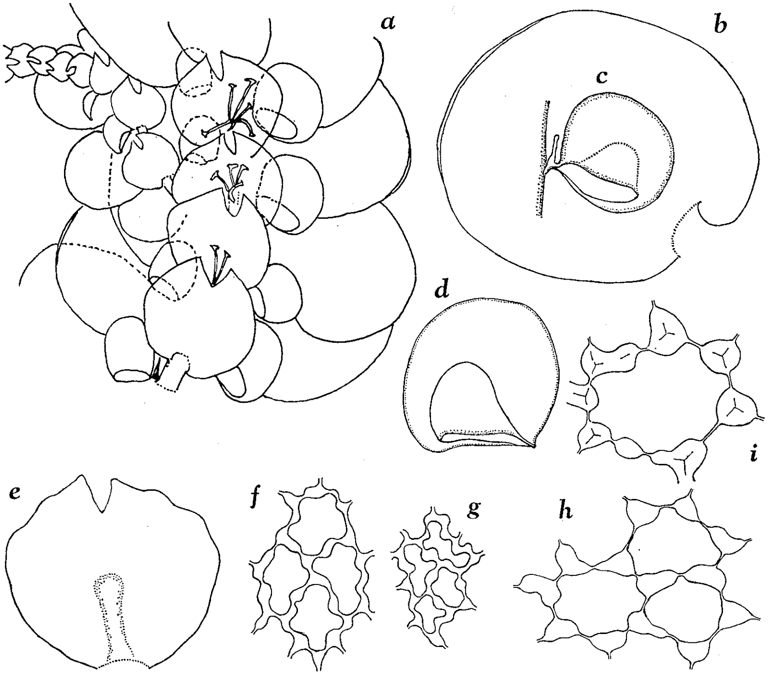

Fig. 1. *Frullania hainanensis* Hatt. & Lin. *a*. Portion of stem, ventral view, ×22. *b*. Lobe of stem-leaf flattened, ventral view, ×36. *c*. Lobule of stem-leaf, ×36. *d*. Do., the inner half removed, dorsal view, ×47. *e*. Stem-underleaf, ×36. *f*. Cells of lobule and stylus of stem-leaf, ×364. *g*. Cells of gibbous inner lamina of ventral mouth-margin of lobule of stem-leaf, ×364. *h–i*. Cells of lobe of stem-leaf, *h* from middle, *i* from base, both ×364. Drawn from type; *a* by Lin and *b–i* by Hattori.

globose, ± dorsiventrally flattened, beak never formed, inner mouth-margin strongly incurved nearly to the base, outer mouth-margin strongly gibbous and folded toward inside of the lobule, this internal folded portion large (1/4–1/3 as large as the lobule), widely ovate-ligulate, with the cells distinctly smaller than those of the other portion of the lobule (compare Fig. 1*f* & *g*); styli small, filiform, 5–6 cells long, usually 2 cells wide at the extreme bases. Stem-underleaves contiguous to imbricate, almost flat, nearly obovate-orbicular, 0.6–0.7 mm long and 0.7–0.8 mm wide, narrowed toward the base, ca 1/5-bifid, sinuses acute or nearly so, lobes triangular, acute to subobtuse at apices, insertions subtransverse; rhizoid-initial area at middle, poorly developed, small, rhizoids rare, long, usually fasciculate, pale brown.

China: Hainan Island, Gianfengling Mt., ca 600 m, on bark of tree, 8 July 1985, Pan-juan Lin 4025 (with *F. motoyana* St.? or a young and creeping shoot of *F. trichodes* Mitt., sterile)—holotype in NICH; dupl. in hb South China Inst. Bot. (Guangdong).

Distr.: Known only from the type locality.

The present new species resembles, and may possibly be a geographical race of, *F. kitagawana* Hatt. endemic to New Caledonia where it is rarely seen. The latter is different from the present species in the absence of flagelliform branches, the wide (0.9-0.95 mm wide) and a little more deeply (ca 1/4) bifid stem-underleaves, the slightly smaller lobes of stem-leaves with narrower basal appendages, and the smaller lobules of stem-leaves whose mouth-margins are so long incurved that the incurvations reach the mouth middle (or slightly more). These differences may be caused by the habitat conditions or the geographical isolation which means it may be a taxon at the infraspecific level. Unfortunately, the present species is based only on the above sterile type specimen, and *F. kitagawana* is known only on the basis of 3 specimens collected in New Caledonia, and one of them contained a gynoecium in young developmental stage (sterile and perianth not developed). We hope, therefore, to obtain specimens of the above two species with well-developed perianths for a comparative study.

We know only *F. ferdinandi-muelleri* Steph. endemic to Australia other than the above two, as species of *Frullania* with such a peculiar leaf-lobule.

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中国海南島で著者の１人（林邦娟）が変った特徴をそなえたヤスデゴケを発見した。葉の下片が大きく，やや扁平な球状であって，通例認められる頂端の突起は全く見られない。下片の口部縁辺は強く内曲するが，本種では特に内側の縁辺がほぼ舌状に大きく発達して，それが下片内側に折りたたまれる。このような特徴は今までニューカレドニアのキタガワヤスデゴケ（新称）とニューサウスウエルズ（オーストラリア）のミューラーヤスデゴケ（新称）にしか見られていない。キタガワヤスデゴケは１個の若い雌花しか発見されず，今回の海南島産の *F. hainanensis* はステリルであるので，両者の充分な比較検討ができない。あるいは，キタガワヤスデゴケの地理的亜種となるものかとも考えられる。